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☐ 1: AF232006[gi:8037790] This record was replaced or removed. See [revision history](#) for details.

LOCUS AF232006 20052 bp DNA linear BCT 23-MAY-2000

DEFINITION *Pseudomonas syringae* pv. tomato strain DC3000 AvrE (avrE), HrpW (hrpW), and GstA (gstA) genes, complete cds; and unknown genes.

ACCESSION AF232006

VERSION AF232006.1 GI:8037790

KEYWORDS

SOURCE *Pseudomonas syringae* pv. tomatoORGANISM *Pseudomonas syringae* pv. tomatoBacteria; Proteobacteria; gamma subdivision; Pseudomonadaceae; *Pseudomonas*.

REFERENCE 1 (bases 1 to 20052)

AUTHORS Charkowski,A.O., Alfano,J.R., Preston,G., Yuan,J., He,S.Y. and Collmer,A.

TITLE The *Pseudomonas syringae* pv. tomato HrpW protein has domains similar to harpins and pectate lyases and can elicit the plant hypersensitive response and bind to pectate

J. Bacteriol. 180 (19), 5211-5217 (1998)

MEDLINE 98422476

REFERENCE 2 (bases 1 to 20052)

AUTHORS Alfano,J.R., Charkowski,A.O., Deng,W.L., Badel,J.L., Petnicki-Ocwieja,T., van Dijk,K. and Collmer,A.

TITLE The *Pseudomonas syringae* Hrp pathogenicity island has a tripartite mosaic structure composed of a cluster of type III secretion genes bounded by exchangeable effector and conserved effector loci that contribute to parasitic fitness and pathogenicity in plants

Proc. Natl. Acad. Sci. U.S.A. 97 (9), 4856-4861 (2000)

MEDLINE 20243785

PUBMED 10781092

REFERENCE 3 (bases 1 to 20052)

AUTHORS Alfano,J.R. and Collmer,A.

TITLE Direct Submission

JOURNAL Submitted (07-FEB-2000) Dept. Biol. Sci., UNLV, 1854 Maryland Parkway, Las Vegas, NV 89154, USA

COMMENT [WARNING] On Mar 14, 2001 this sequence was replaced by a newer version gi:13325077.

FEATURES

source

Location/Qualifiers

1..20052

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pathovar: tomato"

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April 25, 2000

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| 4201 | gcgggctgac | gccgaaaaaa | accaaaggcc | ttgagctcga | cgcgcgcaag | gcgcaggcgg |
| 4261 | cggcggtcgg | tttgagtggc | gacaagctgt | ttatcgctga | cactcagggc | agactttaca |
| 4321 | gtgcggaccg | tagcgcattc | gagggcgatg | acccgaaatt | gaagctgatg | cccagcagg |
| 4381 | caaactttca | gctggaaggc | gtgcccctcg | gagggcacia | ccgcgtcacc | ggattcatca |
| 4441 | acggggacga | cggcggtgtt | cacgcgctga | tcaaaaaccg | tcagggcgag | actcactccc |
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| 4561 | tactgaacaa | caatcgcggc | ctgaccatgc | ccccgccacc | caccgcccgt | gaccggctca |
| 4621 | acctcgatcg | tgcgggcctg | gttggcctga | gtgaaggacg | cattcaacgc | tgggacgcaa |
| 4681 | cgccagaatg | ctggaagac | gcaggcataa | aagatatcga | tcgcctgcaa | cgcggcgccg |
| 4741 | acagcaatgc | ttatgtactc | aagggcgga | agctgcacgc | actcaagatt | gcggccgaac |
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| 4861 | tcgaaatggg | caaagagatc | gaaggcctcg | acgaccgagt | gatcaaagcc | tttgcaatgg |
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| 5221 | cccagatcga | agacgccgag | ggcaagggtc | ttatgcagct | caaggcaggc | caatggcaaa |
| 5281 | ggttcgaaca | gcgcccggta | gaagaaaacg | gtttgaatga | tgtgactcgc | cgcattcacag |
| 5341 | gttcaaacaa | gacctggcga | attccaaaaa | ccgggctgac | gctcagaatg | gacgtcaata |
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| 5701 | tcaaggaact | ggaaaccctg | cgcgacgagc | tggaaaatca | cagctacacc | gcgctgatgt |
| 5761 | cgatcgggtca | gagctatggc | aaggcgaaaa | accttaaaaca | gcaggacggc | attctcaacc |
| 5821 | agcatggcgga | gctggccaag | ccgtcgggtgc | gcatgcagtt | tggcaagaag | cttgctgatac |
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| 6601 | gcgaaggctg | gggaaacgtg | agcggcgggt | tcggtgccgg | caaagactac | tgccgggct |
| 6661 | tttttgacgc | aaataatcct | gcacgcagtg | ttgatgtcgg | caacaaccgc | acactgaccc |
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| 6781 | tggctctcaa | tggtccggat | gaagacatcg | acgcattcgt | cgacgacctg | tttgaaggte |
| 6841 | agttgaatcc | attgcagggtg | ctgaaaaaag | cagtggacca | tgagagctac | gaggctcggc |
| 6901 | gattcaactt | cgacctcacg | gcagggtgaa | ctgccgatat | acgcgcggga | ataaacctga |
| 6961 | ccgaagaccg | agaccggaat | gccgacccca | acagcgattc | gttttctgcg | gtagtgcgcg |
| 7021 | gcggattcgc | tgcgaaatc | accgttaacc | tgatgacctc | caccgattat | tcggtgaccc |
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| 8461 | accatctcac | tgtgctcggg | caattcaatg | atcgccgctt | cgttgttctg | accgtcataa |
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| 8581 | atgaagcggg | cgaaatecgg | ttgcgaagtt | ttcatcgtca | tagtccttta | aggttaaaac |
| 8641 | agcatgaagc | atgccggaca | gcaggcgctt | gcagcctgtg | tccggcgccg | ggattaacgc |
| 8701 | gggtcaagca | agccctcttc | aagtgccctc | aatgcgtcat | cgtcttttgt | cggctgctta |
| 8761 | agcgctcgc | gtgctgacgc | gactgcgttc | aacacacctt | catccacgac | ccgaaccgta |
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| 9721 | aggcggcctg | aaacatcggc | ttgaccacgc | tgttgaccgt | ctcgtgagca | atgcccgcca |
| 9781 | ccatcccgat | tatcgaagcc | ttgagcatgt | tggcgctcgt | gctggtctcg | ggaatcgtgt |
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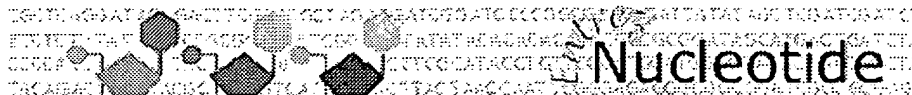
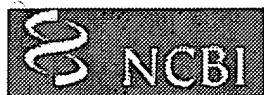
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Revised: July 5, 2002.

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☐ 1: AF232004. *Pseudomonas syrin...*[gi:13325077]

Links

LOCUS AF232004 52498 bp DNA linear BCT 05-MAR-2001

DEFINITION *Pseudomonas syringae* pv. tomato strain DC3000 Hrp pathogenicity island, complete sequence.

ACCESSION AF232004 AF061028 AF061029 AF232006 L41861

VERSION AF232004.3 GI:13325077

KEYWORDS .

SOURCE *Pseudomonas syringae* pv. tomato

ORGANISM *Pseudomonas syringae* pv. tomato

Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales; Pseudomonadaceae; *Pseudomonas*.

REFERENCE 1 (bases 25494 to 29778)

AUTHORS Preston,G., Huang,H.C., He,S.Y. and Collmer,A.

TITLE The HrpZ proteins of *Pseudomonas syringae* pvs. *syringae*, *glycinea*, and tomato are encoded by an operon containing *Yersinia ysc* homologs and elicit the hypersensitive response in tomato but not soybean

JOURNAL Mol. Plant Microbe Interact. 8 (5), 717-732 (1995)

MEDLINE 96025089

PUBMED 7579616

REFERENCE 2 (bases 22134 to 25847; 29687 to 32670)

AUTHORS Deng,W.L., Preston,G., Collmer,A., Chang,C.J. and Huang,H.C.

TITLE Characterization of the hrpC and hrpRS operons of *Pseudomonas syringae* pathovars *syringae*, tomato, and *glycinea* and analysis of the ability of hrpF, hrpG, hrpC, hrpT, and hrpV mutants to elicit the hypersensitive response and disease in plants

JOURNAL J. Bacteriol. 180 (17), 4523-4531 (1998)

MEDLINE 98389667

PUBMED 9721291

REFERENCE 3 (bases 31672 to 51723)

AUTHORS Charkowski,A.O., Alfano,J.R., Preston,G., Yuan,J., He,S.Y. and Collmer,A.

TITLE The *Pseudomonas syringae* pv. tomato HrpW protein has domains similar to harpins and pectate lyases and can elicit the plant hypersensitive response and bind to pectate

JOURNAL J. Bacteriol. 180 (19), 5211-5217 (1998)

MEDLINE 98422476

PUBMED 9748456

REFERENCE 4 (bases 901 to 22404; 31672 to 51723)

AUTHORS Alfano,J.R., Charkowski,A.O., Deng,W.L., Badel,J.L., Petnicki-Ocwieja,T., van Dijk,K. and Collmer,A.

TITLE The *Pseudomonas syringae* Hrp pathogenicity island has a tripartite mosaic structure composed of a cluster of type III secretion genes bounded by exchangeable effector and conserved effector loci that contribute to parasitic fitness and pathogenicity in plants

JOURNAL Proc. Natl. Acad. Sci. U.S.A. 97 (9), 4856-4861 (2000)

MEDLINE 20243785

PUBMED 10781092

4/25/00
too new.

REFERENCE 5 (bases 1 to 52498)
AUTHORS Ramos,A.R., Rehm,A.H. and Collmer,A.R.
TITLE Pseudomonas syringae pv. tomato DC3000 hrpL through hrcU
JOURNAL Unpublished

REFERENCE 6 (bases 1 to 52498)
AUTHORS Alfano,J.R. and Collmer,A.
TITLE Direct Submission
JOURNAL Submitted (07-FEB-2000) Dept. Biol. Sci., UNLV, 1854 Maryland Parkway, Las Vegas, NV 89154, USA

REFERENCE 7 (bases 1 to 52498)
AUTHORS Ramos,A.R., Rehm,A.H. and Collmer,A.R.
TITLE Direct Submission
JOURNAL Submitted (22-NOV-2000) Plant Pathology, Cornell University, 334 Plant Sciences Bldg., Ithaca, NY 14850, USA

REMARK Sequence update by submitter

REFERENCE 8 (bases 1 to 52498)
AUTHORS Ramos,A.R., Rehm,A.H. and Collmer,A.R.
TITLE Direct Submission
JOURNAL Submitted (05-MAR-2001) Plant Pathology, Cornell University, 334 Plant Sciences Bldg., Ithaca, NY 14850, USA

REMARK Sequence update by submitter

COMMENT On or before Mar 14, 2001 this sequence version replaced
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gene      15667..16926
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CDS       15667..16926
          /gene="hrcN"
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gene 17942..18664
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CDS 17948..18664
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gene 18654..19067
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gene 19091..19717
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CDS 19091..19717
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gene 19725..19991
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CDS 19725..19991
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membrane component of type III protein secretion system"
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CDS 19992..20786
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gene 20927..21862
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CDS 20927..21862
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/note="contains 4 transmembrane domains; likely inner
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gene complement (22767..22970)
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CDS complement (22767..22970)
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gene complement(22966..25069)
 /gene="hrcC"
CDS complement(22967..25069)
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 pathway; formerly designated HrpH"
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gene complement(25808..26389)
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CDS complement(25808..26389)

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CDS complement (27767..28141)
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hrp and avr gene expression"
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gene complement (30724..31671)
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CDS complement (30724..31671)
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hrp and avr gene expression"
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complement (32753..34240)

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CDS

34461..39848

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CDS

complement (39897..40292)

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| 19381 | catgaccctg | aataccgacc | cggatgtcgt | cgctcacctg | ctcgacaaca | cccagcgcac |
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| 20581 | tgctgttgat | cgaggccgcg | ctggcgatca | tcgggctgta | cgcgcaacag | ctgaacgtct |
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| 20761 | tgggctttgt | ggtgcaggtg | ccgtgagcga | aaaaacagaa | aaagccacgc | ccaaacagat |
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| 30721 | gcgtcacaga | ccccggacct | cgcagagtat | cggcgctgca | actcccagtt | ccttcatgcg |
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| 31441 | gctctctgcc | agcgactcgg | gaatggcggc | gcagttcatg | cccacaaagg | gtcccagcct |
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| 31741 | tttagttccc | cgggaaatga | gaaaaagatc | acaaagttga | gaattactat | catattaata |
| 31801 | tcaccatacc | aagacgaccc | taccgataga | ctcaggctct | tgagatgatt | gctttaatct |
| 31861 | atcgttactc | caatgcgaac | aagcgcttac | agcgtccatg | cgttggtcgc | ccccgcaagc |
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| 32221 | cgataccaac | cagcttagtt | ccgccccacg | agcagtcgga | tttccgaaca | acacagagge |
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| 32521 | tctaaatgtg | tgtaatcttt | cacttacatt | cggctaataa | agttcatcaa | aataatcata |
| 32581 | tgtagcgctc | tacatcatat | ggctaagcgc | catcttttagg | gtccaaaaaa | cgggtaacgc |
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| 33361 | ggtctacggc | atggttaagc | tcgactacgt | caaaatacgg | cgtgttgggc | accgggggtca |
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| 33721 | tgcgccccgt | ggatggaatg | aattgccaca | aacctgccgc | agcggccgga | gagttggcca |
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| 34201 | gcaagcgtgg | gctcgatacg | gggaaggcga | cgggcgggcat | gggcgggaat | gtcctgagcg |
| 34261 | tgtccaccct | acgtggcacg | ctcgccgtta | cggttccctt | ttgaaaccga | gatcggcgca |
| 34321 | cacaacgcac | tgctgaatcc | tttcagccgt | aagtttttcc | gatggaaccc | gctggcattg |
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| 41161 | aagccatcag | ctcacctacc | ggatgggtgg | acgaaccctg | aaccttcttc | tgggttcagca |
| 41221 | gcgcgcgttc | actttttcacg | aacgccttgt | cctgagcgac | ttcctcgggg | gtttttttga |

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| 41461 | ttatcgaagc | cttgagcatg | ttggcgctgc | tgctggtctc | gggaatcgtg | tctcgcagct |
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52321 gccgggggtg ttgctgctga tcggcacctt ctctgtacct ccttcgccgn gctggctggc
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52441 cgatgcgcan cgtgaagtgg acgaaatgaa agctcatgac gagcaggcgc gcaatcgt

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